

REMARKS

The Applicants request that the Examiner reconsider the rejection of the claims of the present application in the light of the foregoing amendments and the following remarks.

35 USC 102(b)

In the official action, the Examiner rejected Claims 1-8, 12-20, and 23-26 as being anticipated by US 6557492 (Robohm). Although Claims 1-26 are cancelled, thereby rendering the rejection moot, the Applicants believe that their claimed apparatus as set forth in Claims 27 and 35, and their claimed method as set forth in Claims 40 and 48 are novel relative to Robohm.

Robohm does not show or describe a means for delivering foam to the interior of a tank at the upper portion thereof such that at least a majority of aquatic animals when stored in the tank are submerged in foam as set forth in Claim 27. Similarly, Robohm does not show or describe means for recirculating fluid from a lower region of the interior of a tank in which the aquatic animals are stored to an upper region of the interior of the tank, such that the fluid passes over at least a majority of the aquatic animals when stored in the tank and the natural proteins of the aquatic animals create a foam as the fluid is recirculated, whereby at least a majority of the aquatic animals when stored in the tank are submerged in foam, as set forth in Claim 35.

Robohm does not show or describe a process in which foam is delivered to the interior of a tank in which aquatic animals are stored as set forth in Claim 40. Robohm describes a device that is designed to maintain animals in a liquid medium. To the extent that oxygen gas is introduced into the liquid, the oxygen is dissolved in the liquid. The Robohm system is designed to intentionally distribute very small oxygen bubbles into the water, so they are readily dissolved. The Examiner is directed to the text at column 13, lines 36-45, of Robohm where it is stated:

In the preferred embodiment, the oxygen diffusers are silica micro-pore oxygen diffusers capable of distributing the very small pure oxygen bubbles into the water column of the tote. The small bubbles results [sic] in a high transfer efficiency of oxygen gas to dissolve the oxygen in the tote water. Micro-pore silica oxygen diffusers are most preferred because they are inexpensive, have

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very efficient oxygen transfer, and create very small bubbles that do not disturb or excite the fish.

The quoted text makes it clear that the oxygen diffusers used in the device described in the Robohm patent distribute very small bubbles in water such that the oxygen will either fully dissolve or migrate and float. The result is that in the Robohm system, the fish are stored in a medium that is predominantly liquid water.

Robohm does not describe or suggest performing the step of recirculating liquid from a lower portion of the interior of tank in which aquatic animals are stored to an upper portion of the interior of the tank and over at least a majority of the aquatic animals in the tank to generate foam from the natural proteins of the aquatic animals as set forth in Claim 48. In contrast, in the apparatus described in Robohm, the fluid is removed from the top of a tank and delivered to the bottom of the tank. See, Robohm, Figure 11 and the text at column 17, line 45, to column 19, line 7. It is also important to note that to the extent Robohm describes a subsystem for recirculating the water in which the fish are kept, the recirculation and filtration system has nothing to do with the oxygen diffusion subsystem and operates independently thereof. Thus, Robohm does not describe or suggest performing the step of recirculating liquid from a lower region of the interior space of a tank in which aquatic animals are stored to an upper region of the interior space in a manner to provide foam in the interior space of the tank in an amount sufficient to submerge at least a majority of the aquatic animals in the tank in the foam as set forth in Claim 48.

For all of the foregoing reasons, it is believed that Claims 27, 35, 40, and 48 are not anticipated by Robohm.

Claims 28-34 depend from Claim 27 either directly or indirectly and thus, include all of the features of Claim 27. Therefore, Claims 28-34 are novel relative to Robohm for at least the same reasons as Claim 27.

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Claims 36-39 depend from Claim 35 either directly or indirectly and thus, include all of the features of Claim 35. Therefore, Claims 36-39 are novel relative to Robohm for at least the same reasons as Claim 35.

Claims 41-47 depend from Claim 40 either directly or indirectly and thus, include all of the features of Claim 40. Therefore, Claims 41-47 are novel relative to Robohm for at least the same reasons as Claim 40.

Claims 49-52 depend from Claim 48 either directly or indirectly and thus, include all of the features of Claim 48. Therefore, Claims 49-52 are novel relative to Robohm for at least the same reasons as Claim 48.

35 USC 103(a)

The Examiner rejected Claims 11, 21, and 22 under 35 USC 103(a) as being unpatentable over Robohm in combination with either US 4155331 (Lawrence et al.) or US 2003/0080444 (Whiteis). The Examiner relies on Lawrence et al. because it is alleged to describe the use of a refrigerated gas for the cryopreservation of aquatic organisms. The Examiner relies on Whiteis because it is alleged to describe the use of pulsed gas injection. Although Claims 11, 21, and 22 are cancelled, thereby rendering the rejection moot, the Applicants believe that their claimed apparatus as set forth in Claims 27 and 35, and their claimed method as set forth in Claims 40 and 48 are patentable over the proposed combinations of references for at least the same reasons explained above in connection with the rejection under 35 USC 102(b).

Neither Lawrence et al. nor Whiteis describes the features of the Applicants' claimed apparatus and method as set forth in Claims 27, 35, 40, and 48, respectively, that are missing from Robohm. Therefore, the proposed combinations would not have all of the features of the Applicants' claimed apparatus as set forth in Claim 27 and in Claim 35. Nor would the proposed combination include all of the steps of the Applicants' claimed method as set forth in Claims 40 and 48.

35 USC 103(a)

The Examiner rejected Claims 9 and 10 under 35 USC 103(a) as being unpatentable over Robohm in combination with US 6382601 (Ohnari). The Examiner relies on Ohnari because it is alleged to describe an arrangement to introduce pressurized gas into a fluid pathway to generate a vacuum to suck fluid from a lower region of a tank to a higher region of the tank. The Examiner asserts that the alleged function happens inherently in the device described in Ohnari.

In explaining the relevance of Ohnari, the Examiner stated:

Ohnari teaches a similar apparatus as that of Robohm wherein Ohnari's apparatus includes an arrangement to introduce pressurized gas (through members 50, 50', 500, 500') into the fluid pathway which generates a vacuum to suck fluid from the lower region of the tank and deliver fluid to the higher region of the tank via the fluid pathway (inherently performed within Ohnari's apparatus).

The Examiner's interpretation of Ohnari is clearly erroneous. In the apparatus described in Ohnari, pressurized liquid (water) is injected tangentially into an enclosed conical space containing a fluid. The tangential injection of the water causes a swirling flow of the fluid inside the conical chamber from the pressure liquid inlet (500) to a gas outlet (101). As a result a pressure gradient is created along the length of the conical chamber which permits a gas to be sucked in at a gas inlet (80), narrowed so that the gas bubbles form a fine stream, and then ejected through the outlet (101) in the form of a plurality of microbubbles. The apparatus described in Ohnari is designed for use in water tank for housing aquatic organisms. The apparatus is designed to provide aeration of the liquid in the tank. Thus, Ohnari does not describe an apparatus that inherently sucks fluid from a lower region of the tank and delivers it to an upper region of the tank. To the contrary, Ohnari describes an apparatus that is designed to receive an aerating gas from an upper portion of the tank and deliver it to the lower portion of the tank.

Notwithstanding the lack of relevance of Ohnari, the reference does not describe the features of the Applicants' claimed apparatus and method as set forth in Claims 27, 35, 40, and 48, respectively, that are missing from Robohm. Therefore, the proposed combination would not have all of the features of the Applicants' claimed apparatus as set forth in Claim 27 and in

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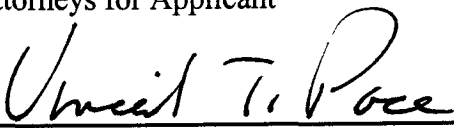
Claim 35. Nor would the proposed combination include all of the steps of the Applicants' claimed method as set forth in Claims 40 and 48.

For all of the foregoing reasons it is believed that the Applicants' claimed apparatus as set forth in Claim 27 and 35 and the Applicants' claimed method as set forth in Claim 40 and 48 are patentable over the proposed combination of Robohm and Ohnari.

CONCLUSION

The Applicants respectfully request that the Examiner reconsider the application in the light of the foregoing amendments and remarks. It is believed that the claims as now presented are in condition for allowance.

Respectfully submitted,
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